Eventide®

eq45 | PARAMETRIC EQ

eq65 | FILTER SET

User Guides

Eventide Inc.
One Alsan Way
Little Ferry, NJ 07643
201-641-1200
www.eventide.com

Table of Contents

CHAPTER 1 – INSTALLATION 6

CHAPTER 2 EQ45 PARAMETRIC EQUALIZER 7

CHAPTER 3 EQ65 FILTER SET 9

CHAPTER 4 – CONTROLS 10

Low Pass Filter 10
Low Frequency Cutoff Control and Indicator 10
Notch/Peak Filters 10
In/Out Switch and Indicator 10
Center Frequency Control and Indicator 10
Depth Control 10
Notch/Peak Selector 10
Fine Frequency 10
High Pass Filter 11
High Frequency Cutoff and Indicator 11

CHAPTER 5 – USING THE EVENTIDE EQ65 12

Notching Narrow Band Coherent Noise 12
Eliminating Broad Band Low Frequency or High Frequency Noise 12
Timbre Shaping 12
Simulations/Special Effects 12

Introduction

The Eventide EQ45 equalizer and EQ65 filter set are compact yet powerful audio engineering tools for ProTools Mix, HD, and HD Accel systems. Each provides you an elegant and easy to use environment to perform myriad types of frequency-based signal processing.

Each plug-in boasts a streamlined, easy to use interface, seamless integration with the Pro Tools authoring environment, and Eventide's legacy of quality design and accuracy.

The EQ45 is an accomplished four-band parametric equalizer with high- and low-cut filters, width and gain controls for each frequency band, and an overload protection mechanism.

The EQ65 is a two-band notch/band pass filter set that allows you to quickly find a selected frequency and perform a boost or cut on the signal.

Whatever your audio application may be, the EQ45 and EQ65 will provide you with flexible new options for your audio application.

About This Manual

We're very confident you'll be able to use your new plug-in without reading this manual, but we urge you to have a quick look. There are several unique features and interesting options presented in this manual, and a cursory glance will help streamline your efficiency. We'll try to keep it all relevant and highlight any tips or cool tricks for you.

We also won't cover much at all about the operation of Pro Tools or the Macintosh environments, as their owner's manuals or online help should provide you with the answers you need. We've made every attempt to integrate the controls and features that you're familiar with as a Pro Tools user into our EQ45/EQ65 plug-in so that you don't have to learn anything new.

If you find the need to get more information from us than this manual can provide, please visit our support forum available via our website (www.eventide.com).

Don't Forget to Register

Before you go any further, please take a moment to register your product. You can either mail in the enclosed card or click on the Register Now link provided on this CD and register online. This helps us keep you informed of any important software updates, and any special offers that may only be available to registered users.

Chapter 1 Installation

Read Me

Please be sure to have a look at the Read Me document on the installation CD for any important last minute updates from us.

Installation

Eventide's EQ45 and EQ65 are part of the Anthology II bundle, which comes in one tidy installer that contains all the necessary files for use under Mac OS 9 or OS X. Boot into the Mac OS that you want to install under before beginning the installation. If you use Pro Tools 5.x, then you'll need to boot into OS 9. Pro Tools 6.x users will want to be running Mac OS X before beginning the installation. Then run the Eventide Installer directly from the Application CD that came with the product. Follow the instructions on-screen to complete the installation.

Please refer to www.eventide.com for the latest on supported operating systems and Pro Tools platforms.

Allocating Memory

If you are running OS9, plug-ins with extensive graphics you may be required to increase your DAE memory allocation to run optimally.

Authorizing with the iLok USB Smart Key

Because the Eventide EQ45/EQ65 utilizes the Pace Interlock copy protection system, you'll need to have your iLok smart key handy. After you've completed the installation, pop the little rectangular piece out of the license card provided in the product carton. Insert it as shown below into the key. Connect the key to any free USB port on the Pro Tools system where you installed the EQ45 or EQ65. Launch Pro Tools and follow the authorization window's instructions.

Removing an Authorization

Should you have to remove the authorization from your iLok key, be sure to put it back onto the original license card. To do this, start Pro Tools. Hold Option+Space Bar while inserting EQ45/EQ65 into a channel. Then, follow the instructions on-screen.

Chapter 2 EQ45 Parametric Equalizer

Eventide's EQ45 is a lightweight, stand-alone parametric equalizer that allows you to gracefully shape the contours of an audio signal by boosting or attenuating its frequency components.

The high resolution and flexibility of its filters and the wide number of parameters offered by the user interface enable you to perform subtle or drastic changes to audio material without the unpleasant artifacts that can often result from limited dynamic range in hi Q filters (single precision arithmetic).

Figure 1 The EQ45 user interface

The EQ45 includes the following components and controls:

- Three overlapping band controls covering 20 Hz – 16 kHz.

  Frequency Ranges

  Low Band: 20 Hz – 500 Hz

  Mid Band: 180 Hz – 3.6 kHz

  High Band: 800 Hz – 16 kHz

- One multiband control covering the entire audio spectrum (12 Hz – 20 kHz).
- High-cut and low-cut Butterworth filter sections, with attenuations of 12 dB/octave beyond their respective -3 dB points.

  Cutoff Filters Frequency Ranges

  Low cut: 5 Hz – 1000 Hz, continuously tunable

  High cut: 400 Hz – 20 kHz, continuously tunable

- Accompanying Width and Gain controls for each parametric filter section. The Width controls support values from ¼ octave to 2 octaves; the Gain facility allows attenuation and boost from -15 dB to 15 dB.
- An overload protection mechanism that responds when a signal's transient extends above -0.1 dBfs.
- An EQ In/Out toggle. Click the object to enable it and to use the full suite of parametric filter; disable it to use only the high- and low-cut filters.

All frequency values are displayed prominently in black print with a white background. You can use the parametric controls to change the settings, or enter a value manually.

Tracking Your Work

Most parameters let you drag the mouse a convenient distance to cover the parameter's full value range. However, you can hold the Command key on the computer keyboard while setting values to get fine resolution control over that parameter's values.

Every number box allows you to type values directly in to immediately set the parameter value. Simply click once in the number box and release the mouse button without moving it. The box becomes highlighted and ready for typing. Try to type in values that correspond to the parameter; for instance, 8 kHz would be entered as "8000."

Chapter 3 EQ65 Filter Set

The EQ65 is a two-band notch/band pass filter set that allows you to adeptly de-emphasize or eliminate completely selected frequencies in an audio recording. This is accomplished through its dual notch and band pass peak filters, which can be precisely configured using the fine tuning control. Designated frequencies also may be attenuated in gradations by using the notch filters in conjunction with the depth controls.

Figure 2 Eventide EQ65 user interface

Chapter 4 Controls

Low Pass Filter

Low Frequency Cutoff Control and Indicator

The Low Frequency Cutoff control knob is used to set and display the 3dB cutoff point of the low pass filter. The filter supports 18 dB/octave cutoffs and impacts frequencies from 5 Hz to 1,000 Hz.

Low Cutoff Filter Specifications

Slope: 18 dB/octave (60 dB/decade)

Frequency Range: 3 dB point continuously tunable from 5 Hz to 1000 Hz

Notch/Peak Filters

Notch filters are designed essentially to remove a selected portion of the bandwidth while allowing other parts of the signal on either side of the notch to pass through. Band pass filters perform the inverse function; they attenuate all frequencies except the selected bandwidth, thereby boosting its emphasis.

Frequency Range: Continuously tunable from 20 Hz to 20 kHz

Notch/Peak Width Select: Selectable: 5%, 10%, or 50% of center frequency

Notch Depth: 0 dB minimum, to full maximum

In/Out Switch and Indicator

Each notch/peak filter can be switched on or off independently. The corresponding indicator display is lit when the notch/peak filter is active.

Center Frequency Control and Indicator

The Center Frequency control knob is used to select the center frequency of the notch/peak filter. The display indicates the 3 dB points of the filter.

Depth Control

The Depth Control allows you to incrementally remove some or all of a designated audio signal. Depth can be set from a minimum of 0 dB to a maximum of ~150 dB.

Notch/Peak Selector

The Notch/Peak selector switch is used to select the filter type and the width of the notch/peak. Each selector supports three selectable widths: 5%, 10%, or 50% of the center frequency at the filter's 3 dB points.

Fine Frequency

The Fine Frequency control accommodates high-sensitivity tuning to help locate the filter's center frequency.

High Pass Filter

High Frequency Cutoff and Indicator

The High Frequency Cutoff control knob is used to set and display the 3dB cutoff point of the high pass filter. The filter supports 18 db/octave cutoffs and can be set to frequencies from 400 Hz to 20 kHz.

High Cutoff Filter Specifications

Slope: 18 dB/octave (60 dB/decade)

Frequency Range: 3 dB point continuously tunable from 400 Hz to 20 kHz

Chapter 5 – Using the Eventide EQ65

The EQ65 is a valuable addition to the sound professional's toolkit. This section lists only a few of its many uses. As you become more familiar with its design and capabilities, you'll be sure to find numerous ways to utilize it that are not listed here.

Notching Narrow Band Coherent Noise

With its precision frequency selectivity and high Q, the EQ65's notch filter is extremely effective at eliminating undesirable coherent signals such as hums and whistles.

To do this, set the center frequency to the fundamental of the unwanted signal using the coarse and fine controls. Use the notch/peak shape selector to select the most effective notch shape. It is often helpful to select the peak mode to help zero in on the target frequency. You can audition the filter's effect using the in/out switch.

Signals with significant harmonic content can be attenuated by combining the pair of notch filters. Set one to the frequency of the fundamental and the other to the most prominent harmonic. If additional harmonics are present, you can gang additional instances of the EQ65 and tune the additional notch filters to the higher harmonics.

Eliminating Broad Band Low Frequency or High Frequency Noise

The EQ65's low pass and high pass filters have sharp roll-offs and extreme stop-band attenuation. This optimized design facilitates eliminating low-frequency rumble and high-frequency hiss.

Timbre Shaping

The EQ65 can be used to subtly shape the tonality of a note of voice or single instrument with rich harmonic content by tuning the notch/peak filters to the fundamental and/or any combination of the harmonics. By adjusting the relative levels of the harmonics, a wide palette of tonality is possible. As described above, multiple instances of the EQ65 can be ganged to handle any number of harmonics.

Simulations/Special Effects

The precise frequency control and flexibility of the EQ65 can be used to simulate distorted phone lines, cell phones, etc.

Note: *Narrow-band filters and sharp cutoff filters should be used with caution. A potential penalty for using them indiscriminately is that they do not decay rapidly in time—they 'ring." Although this may not present problems in some applications, it may in others. Obviously, if the data-collection duration is shorter than or comparable to the impulse response of the narrow-band filter, the transient effects will not have time to die out. Likewise, the notch should not be too narrow in a 60-Hz rejection filter. Even a bandpass filter has a certain decay rate that may be too slow for some applications.*
